

---

# **American River Pump Station Project**

## **Final Environmental Impact Statement/**

## **Environmental Impact Report**

---

### **Table of Contents**

<u>Chapter/Section</u>		<u>Page</u>
Executive Summary (Bound Separately)		
List of Acronyms and Abbreviations .....		
<b>Chapter 1.0 - Introduction .....</b> <b>1-1</b>		
1.1	Project Purpose .....	1-1
1.2	Project History.....	1-1
1.2.1	PCWA Original Pump Station .....	1-3
1.2.2	Land Purchase Agreement .....	1-3
1.2.3	Operations Under the Land Purchase Agreement.....	1-3
1.2.4	U.S. Bureau of Reclamation Management of Auburn Dam Construction Site.....	1-4
1.2.5	State of California Interest.....	1-5
1.3	Project Needs and Objectives.....	1-5
1.3.1	PCWA Needs for Water Supply and Conveyance.....	1-5
1.3.1.1	PCWA Existing Water Entitlements.....	1-5
1.3.1.2	PCWA Water and Conveyance Needs.....	1-6
1.3.2	Auburn Dam Bypass Tunnel Safety .....	1-7
1.3.3	River Restoration .....	1-8
1.3.4	Public River Access for Health and Safety, Resource Protection, and Emergency Purposes.....	1-8
1.3.5	Land Purchase Agreement .....	1-8
1.3.6	Expandable Conveyance Facility.....	1-8
1.4	Uses of This Document .....	1-9
1.4.1	Document Organization .....	1-10
1.4.2	Scoping Summary .....	1-11
1.4.2.1	Summary of Public Concerns .....	1-12
1.4.3	Public Review of Draft EIS/EIR.....	1-14
1.4.4	Final EIS/EIR.....	1-14
<b>Chapter 2.0 - Description of Alternatives .....</b> <b>2-1</b>		
2.1	Development of Alternatives.....	2-1
2.2	Alternatives Considered in Detail .....	2-5
2.2.1	No Action/No Project Alternative .....	2-6
2.2.1.1	No Action/No Project Alternative Construction Schedule and Activities.....	2-16
2.2.1.2	No Action/No Project Alternative Operation and Maintenance .....	2-18

2.2.2	Proposed Project - Mid-Channel Diversion Alternative .....	2-19
2.2.2.1	Major Features of the Proposed Project.....	2-19
2.2.2.2	Proposed Project Construction Schedule and Activities.....	2-29
2.2.2.3	Proposed Project Operation and Maintenance.....	2-30
2.2.3	Upstream Diversion Alternative .....	2-33
2.2.3.1	Major Features of the Upstream Diversion Alternative.....	2-34
2.2.3.2	Upstream Diversion Alternative Construction Schedule and Activities .....	2-35
2.2.3.3	Upstream Diversion Alternative Operation and Maintenance.....	2-35
2.3	Environmental Protection and Mitigation Measures.....	2-35
2.4	Summary of the Alternatives and Impacts .....	2-38
2.5	Alternatives Considered and Eliminated .....	2-39
2.6	Permits and Approvals .....	2-41
<b>Chapter 3.0 - Affected Environment and Environmental Consequences.....</b>		<b>3-1</b>
3.1	Introduction .....	3-1
3.1.1	Environmental Analysis Sections .....	3-1
3.1.1.1	Affected Environment.....	3-2
3.1.1.2	Environmental Consequences/Impact Analysis .....	3-2
3.2	Project Study Area.....	3-5
3.2.1	Regional Setting .....	3-5
3.2.2	Project Area Setting .....	3-6
3.2.3	Placer County Water Agency Water Service Area .....	3-6
3.2.4	Water Service Area for U.S. Bureau of Reclamation's Future Central Valley Project Actions in the American River Basin .....	3-8
3.3	Impact Assessment Framework and Methodology .....	3-9
3.3.1	Facilities-Related Analysis Framework .....	3-9
3.3.1.1	Presentation of Facilities-Related Impacts .....	3-9
3.3.1.2	Cumulative Facilities-Related Impacts.....	3-10
3.3.2	Diversion-Related Analysis Framework .....	3-14
3.3.2.1	Hydrologic Framework .....	3-14
3.3.2.2	Models Used for the Hydrologic (Diversion-Related) Impact Analysis.....	3-17
3.3.2.3	Description of Simulations and Impact Analysis Comparisons ..	3-21
3.3.2.4	Modeling Assumptions .....	3-23
3.3.3	Compliance With Endangered Species and Fish and Wildlife Coordination Acts .....	3-26
3.3.3.1	Endangered Species Acts .....	3-26
3.3.3.2	Fish and Wildlife Coordination Act .....	3-27
3.4	Water Supply and Hydrology .....	3-28
3.4.1	Affected Environment.....	3-28
3.4.1.1	Regional Setting .....	3-28
3.4.1.2	Project Area Setting .....	3-29
3.4.1.3	Water Supply System and Water Service Area.....	3-29

3.4.2	Environmental Consequences/Impact Analysis .....	3-38
3.4.2.1	Methodology .....	3-38
3.4.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-38
3.4.2.3	Impact Indicators and Significance Criteria .....	3-38
3.4.2.4	Impact Analysis .....	3-39
3.4.2.5	Environmental Protection and Mitigation Measures.....	3-51
3.5	Fish Resources and Aquatic Habitat .....	3-53
3.5.1	Affected Environment.....	3-53
3.5.1.1	Regional Setting .....	3-53
3.5.1.2	Project Area Setting .....	3-53
3.5.2	Environmental Consequences/Impact Analysis .....	3-63
3.5.2.1	Methodology .....	3-63
3.5.2.2	Applicable Laws, Ordinances, Regulations and Standards .....	3-78
3.5.2.3	Impact Indicators and Significance Criteria .....	3-82
3.5.2.4	Impact Analysis.....	3-87
3.5.2.5	Environmental Protection and Mitigation Measures.....	3-152
3.6	Terrestrial Resources .....	3-156
3.6.1	Affected Environment.....	3-156
3.6.1.1	Regional Setting .....	3-156
3.6.1.2	Project Area Setting .....	3-156
3.6.2	Environmental Consequences/Impact Analysis .....	3-166
3.6.2.1	Methodology .....	3-166
3.6.2.2	Applicable Laws, Ordinances, Regulations and Standards .....	3-170
3.6.2.3	Impact Indicators and Significance Criteria .....	3-171
3.6.2.4	Impact Analysis.....	3-175
3.6.2.5	Environmental Protection and Mitigation Measures.....	3-201
3.7	Water Quality.....	3-205
3.7.1	Affected Environment.....	3-205
3.7.1.1	Regional Setting .....	3-205
3.7.1.2	Project Area Setting .....	3-205
3.7.2	Environmental Consequences/Impact Analysis .....	3-206
3.7.2.1	Methodology .....	3-206
3.7.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-207
3.7.2.3	Impact Indicators and Significance Criteria .....	3-209
3.7.2.4	Impact Analysis.....	3-210
3.7.2.5	Environmental Protection and Mitigation Measures.....	3-219
3.8	Recreation .....	3-223
3.8.1	Affected Environment.....	3-223
3.8.1.1	Regional Setting .....	3-223
3.8.1.2	Project Area Setting .....	3-223
3.8.2.	Environmental Consequences/Impact Analysis .....	3-228
3.8.2.1	Methodology .....	3-228
3.8.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-229
3.8.2.3	Impact Indicators and Significance Criteria .....	3-231
3.8.2.4	Impact Analysis.....	3-233
3.8.2.5	Environmental Protection and Mitigation Measures.....	3-254

3.9	Visual Resources.....	3-259
3.9.1	Affected Environment.....	3-259
3.9.1.1	Regional Setting .....	3-259
3.9.1.2	Project Area Setting .....	3-259
3.9.2	Environmental Consequences/Impact Analysis .....	3-261
3.9.2.1	Methodology .....	3-261
3.9.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-264
3.9.2.3	Impact Indicators and Significance Criteria .....	3-266
3.9.2.4	Impact Analysis .....	3-267
3.9.2.5	Environmental Protection and Mitigation Measures.....	3-276
3.10	Cultural Resources.....	3-278
3.10.1	Affected Environment.....	3-278
3.10.1.1	Regional Setting .....	3-278
3.10.1.2	Project Area Setting .....	3-278
3.10.2	Environmental Consequences/Impact Analysis .....	3-278
3.10.2.1	Methodology .....	3-278
3.10.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-280
3.10.2.3	Impact Indicators and Significance Criteria .....	3-280
3.10.2.4	Impact Analysis .....	3-281
3.10.2.5	Environmental Protection and Mitigation Measures.....	3-290
3.11	Power Supply .....	3-292
3.11.1	Affected Environment.....	3-292
3.11.2	Environmental Consequences/Impact Analysis .....	3-295
3.11.2.1	Methodology .....	3-295
3.11.2.2	Impact Indicators and Significance Criteria .....	3-296
3.11.2.3	Impact Analysis .....	3-297
3.11.2.4	Environmental Protection and Mitigation Measures.....	3-301
3.12	Land Use .....	3-302
3.12.1	Affected Environment.....	3-302
3.12.1.1	Project Area Setting .....	3-302
3.12.2	Environmental Consequences/Impact Analysis .....	3-303
3.12.2.1	Methodology .....	3-303
3.12.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-303
3.12.2.3	Impact Indicators and Significance Criteria .....	3-303
3.12.2.4	Impact Analysis .....	3-304
3.12.2.5	Environmental Protection and Mitigation Measures.....	3-307
3.13	Geology and Soils.....	3-308
3.13.1	Affected Environment.....	3-308
3.13.1.1	Project Area Setting .....	3-308
3.13.1.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-312
3.13.2	Environmental Consequences/Impact Analysis .....	3-312
3.13.2.1	Methodology .....	3-312
3.13.2.2	Impact Indicators and Significance Criteria .....	3-313
3.13.2.3	Impact Analysis .....	3-313
3.13.2.4	Environmental Protection and Mitigation Measures.....	3-316

3.14	Transportation and Circulation.....	3-317
3.14.1	Affected Environment.....	3-317
3.14.1.1	Project Area Setting .....	3-317
3.14.2	Environmental Consequences/Impact Analysis.....	3-320
3.14.2.1	Methodology .....	3-320
3.14.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-321
3.14.2.3	Impact Indicators and Significance Criteria .....	3-321
3.14.2.4	Impact Analysis.....	3-322
3.14.2.5	Environmental Protection and Mitigation Measures.....	3-329
3.15	Air Quality .....	3-332
3.15.1	Affected Environment.....	3-332
3.15.1.1	Regional Setting .....	3-332
3.15.1.2	Project Area Setting .....	3-333
3.15.2	Environmental Consequences/Impact Analysis.....	3-335
3.15.2.1	Methodology .....	3-335
3.15.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-336
3.15.2.3	Impact Indicators and Significance Criteria .....	3-337
3.15.2.4	Impact Analysis.....	3-337
3.15.2.5	Environmental Protection and Mitigation Measures.....	3-345
3.16	Noise .....	3-347
3.16.1	Affected Environment.....	3-347
3.16.1.1	Project Area Setting .....	3-347
3.16.2	Environmental Consequences/Impact Analysis.....	3-348
3.16.2.1	Methodology .....	3-348
3.16.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-348
3.16.2.3	Impact Indicators and Significance Criteria .....	3-351
3.16.2.4	Impact Analysis.....	3-352
3.16.2.5	Environmental Protection and Mitigation Measures.....	3-358
3.17	Public Health and Worker Safety.....	3-361
3.17.1	Affected Environment.....	3-361
3.17.1.1	Project Area Setting .....	3-361
3.17.2	Environmental Consequences/Impact Analysis.....	3-364
3.17.2.1	Methodology .....	3-364
3.17.2.2	Applicable Laws, Ordinances, Regulations, and Standards .....	3-365
3.17.2.3	Impact Indicators and Significance Criteria .....	3-367
3.17.2.4	Impact Analysis.....	3-368
3.17.2.5	Environmental Protection and Mitigation Measures.....	3-373
3.18	Other Impact Considerations.....	3-381
3.18.1	Indian Trust Assets.....	3-381
3.18.2	Essential Fish Habitat.....	3-381
3.18.3	Environmental Justice .....	3-382
3.18.4	Irreversible and Irretrievable Use of Resources .....	3-382
3.18.5	Short-term Uses of the Environment Versus Long-term Productivity .....	3-382
3.18.6	Climate Change .....	3-383

3.19	Endangered Species Act Compliance .....	3-384
3.19.1	Introduction .....	3-384
3.19.1.1	Endangered, Threatened, or Proposed Species .....	3-384
3.19.1.2	Candidate Species .....	3-386
3.19.1.3	Critical Habitat .....	3-387
3.19.1.4	Essential Fish Habitat.....	3-388
3.19.2	Consultation to Date.....	3-388
3.19.2.1	U.S. Fish and Wildlife Service .....	3-388
3.19.2.2	National Marine Fisheries Service.....	3-390
3.19.3	Current Management Direction .....	3-391
3.19.4	Purpose of the Proposed Project .....	3-391
3.19.5	Description of the Proposed Project .....	3-391
3.19.5.1	Conservation Measures as Part of the Description of the Proposed Project.....	3-392
3.19.6	Action Area .....	3-394
3.19.6.1	Species Accounts and Status of Species in the Action Area.....	3-394
3.19.7	Proposed Project, Interrelated, Interdependent, and Cumulative Effects.....	3-398
3.19.7.1	Direct and Indirect Effects .....	3-398
3.19.7.2	Interrelated Effects .....	3-403
3.19.7.3	Interdependent Effects .....	3-404
3.19.7.4	Cumulative Effects.....	3-404
3.19.8	Conclusion and Determination .....	3-405
<b>Chapter 4.0 - Consultation and Coordination.....</b>		<b>4-1</b>
4.1	Consultation .....	4-1
4.1.1	Federal Endangered Species Act Consultation .....	4-1
4.1.2	Fish and Wildlife Coordination Act Consultation .....	4-2
4.1.3	Indian Trust Assets and Native American Consultation.....	4-2
4.1.4	National Historic Preservation Act/State Office of Historic Preservation Consultation .....	4-2
4.1.5	California Resources Agency Department of Parks and Recreation.....	4-3
4.1.6	California Department of Fish and Game Coordination.....	4-3
4.2	Public Involvement.....	4-3
4.2.1	Public Meetings.....	4-4
4.2.2	Environmental Impact Statement/Environmental Impact Report Scoping .....	4-5
4.2.3	Summary of Public Concerns .....	4-5
4.2.4	Public Review of Draft EIS/EIR.....	4-7
4.3	Distribution List.....	4-8
<b>Chapter 5.0 - List of Preparers .....</b>		<b>5-1</b>
<b>Chapter 6.0 - References .....</b>		<b>6-1</b>
<b>Glossary .....</b>		<b>G-1</b>
<b>Index .....</b>		<b>I-1</b>

## **List of Appendices**

- Appendix A      Auburn State Recreation Area Prefire Management Plan
- Appendix B      Draft Contract Between the United States and Placer County Water Agency Related to American River Pumping Plant and Associated Facilities
- Appendix C      Responses to Comments on the Draft EIS/EIR  
                     Volume 1, List of Commenters and Master Responses  
                     Volume 2, Individual Comment Letters and Responses
- Appendix D      Mitigation Monitoring and Reporting Program/Environmental Commitments Plan

## **List of Figures**

<b><u>Figure</u></b>		<b><u>Page</u></b>
1-1      Regional Setting .....		1-2
2-1      Regional Setting .....		2-2
2-2      Project Area Setting.....		2-3
2-3      Project Area.....		2-4
2-4      Existing Project Area Conditions .....		2-11
2-5      Major Features of the No Action/No Project Alternative .....		2-12
2-6      Major Features of the Proposed Project (Mid-Channel Diversion) .....		2-13
2-7      Public River Access Facilities at Auburn Dam Site and Oregon Bar (Proposed Project-revised) .....		2-14
2-8      Major Features of the Upstream Diversion Alternative .....		2-15
2-9      Estimated Diversion Patterns for Alternatives .....		2-17
2-10     Relationship of Proposed Project Intake and Pump Station Facilities .....		2-21
2-11     Hydraulic Profile of Water Deliveries from the American River Pump Station.....		2-32
3.2-1    PCWA's Water Service Area to be Served by the American River Pump Station Project .....		3-7
3.4-1    Average, Minimum and Maximum Monthly River Volumes, Water Years 1988- 1996, North Fork American River .....		3-36
3.4-2    North Fork American River Flows, June - November 1991 .....		3-36
3.4-3    North Fork American River Flows, August 1991 .....		3-37
3.4-4    Number of Peak Flow Events That Produced Average Daily Flows Greater than 10,000 cfs, North Fork American River, 1969 Through 1996 .....		3-40

3.5-1	Auburn Ravine Watershed and Related Delivery System Infrastructure .....	3-58
3.5-2	Regional View of Auburn Ravine Watershed.....	3-59
3.5-3	Hydraulic Profile of Water Deliveries from the American River Pump Station.....	3-61
3.5-4	Suggested Locations for Monitoring Flow and Water Temperature, Auburn Ravine .....	3-155
3.6-1	Habitat Types in the Project Area .....	3-159
3.6-2	Habitat Types in the Oregon Bar Area.....	3-160
3.8-1	Recreational Opportunities Along the Middle Fork American River .....	3-225
3.8-2	American River Pump Station Project Area, Recreation Trails Map.....	3-227
3.9-1	Location of Viewpoints .....	3-260
3.13-1	Project Study Area Geology.....	3-311
3.14-1	Access Roads to Project Site .....	3-318
3.17-1	Project Site and Location of Sensitive Receptors .....	3-362

### **List of Tables**

<b>Table</b>		<b>Page</b>
1-1	Minimum and Maximum Monthly Diversions of Middle Fork Project Water Supplies .....	1-7
1-2	Revisions and Corrections Made to the Draft EIS/EIR.....	1-15
2-1	Comparison of the Alternatives to Project Purpose, Needs, and Objectives .....	2-7
2-2	Summary of Major Features and Activities for the Alternatives .....	2-8
2-3	Diversion Pattern at the Seasonal Pump Station Under the No Action/ No Project Alternative.....	2-16
2-4	Estimated Type and Duration of Construction Equipment Activities for the No Action/No Project Alternative .....	2-18
2-5	Estimated Type and Duration of Construction Equipment and Activities for the Proposed Project and Upstream Diversion Alternative .....	2-30
2-6	Diversion Pattern at Year-Round Pump Station Proposed Project and Upstream Diversion Alternative.....	2-31
2-7	Environmental Protection and Mitigation Measures.....	2-36
2-8	Summary of Alternatives Considered and Eliminated From Further Analysis.....	2-39
2-9	Anticipated Permits and Approvals for the Proposed Project .....	2-41
3.3-1	Modeling Standards and Applications .....	3-25

3.4-1	Allowable MFP Monthly Diversion Schedule Per Pacific Gas and Electric Company Contract Limits .....	3-30
3.4-2	Projected Water Demands in Service Area .....	3-32
3.4-3	Placer County Water Agency Water Rationing Stages and Reduction Goals .....	3-33
3.4-4	Average Monthly American River Volume in Vicinity of Auburn Pump Station (1987-1996) .....	3-35
3.4-5	Water Supply and Hydrology Impact Indicators and Significance Criteria .....	3-39
3.4-6	American River High-flow Event Data .....	3-41
3.4-7	Changes in Central Valley Project Percent Allocation Under the Existing Condition and Action Alternatives .....	3-47
3.4-8	Changes in CVP Percent Allocation Under Future No Action/No Project and Future Conditions .....	3-48
3.5-1	Estimated Streamflows in Auburn Ravine under Present Management Conditions ....	3-55
3.5-2	Estimated Streamflows in Auburn Ravine Near Highway 65 Bridge in Lincoln .....	3-55
3.5-3	Fish Resources and Aquatic Habitat Facilities-Related Impact Indicators and Significance Criteria .....	3-82
3.5-4	Fish Resources and Aquatic Resources Diversion-Related Impact Indicators and Significance Criteria .....	3-83
3.6-1	Federal and State Listed and Proposed Species That May Occur in the Project Area .....	3-163
3.6-2	Federal and State Species of Concern That May Occur in the Project Area .....	3-164
3.6-3	Terrestrial Resources Facilities-Related Impact Indicators and Significance Criteria .....	3-172
3.6-4	Terrestrial Resources Diversion-Related Impact Indicators and Significance Criteria .....	3-172
3.6-5	CEQA Thresholds of Significance .....	3-174
3.6-6	Federal and State Species of Concern That May Occur in the Project Area .....	3-203
3.7-1	Water Quality Objectives for the Affected Water Bodies .....	3-207
3.7-2	Water Quality Impact Indicators and Significance Criteria .....	3-209
3.8-1	Recreation Impact Indicators and Significance Criteria .....	3-231
3.8-2	Total Monthly Hours When Middle Fork American River Flows Would be Greater than 850 cfs .....	3-240
3.9-1	Visual Resources Impact Indicators and Significance Criteria .....	3-267
3.10-1	Cultural Resources Impact Indicators and Significance Criteria .....	3-281
3.11-1	Power Resources of the Central Valley Project .....	3-292
3.11-2	Major Pumping Plants in the CVP .....	3-293
3.11-3	Folsom Reservoir Water Surface Elevation Pumping Conditions .....	3-294
3.12-1	Land Use Impact Indicators and Significance Criteria .....	3-303

3.13-1	Geology and Soils Impact Indicators and Significance Criteria .....	3-313
3.14-1	Existing Condition Traffic LOS Evaluation.....	3-319
3.14-2	Transportation and Circulation Impact Indicators and Significance Criteria.....	3-321
3.14-3	Project Construction Trip Generation Assumptions .....	3-324
3.14-4	Proposed Project – Construction Traffic LOS Evaluation .....	3-324
3.14-5	Project Operation Trip Generation Assumptions .....	3-325
3.14-6	Proposed Project Operations Traffic LOS Evaluation .....	3-326
3.14-7	Cumulative Condition Traffic LOS Evaluation .....	3-328
3.15-1	Air Pollutant Data Summary for Auburn, Cool and Rocklin (1995 - 1999) .....	3-334
3.15-2	Federal and State Ambient Air Quality Standards .....	3-336
3.15-3	Air Quality Impact Indicators and Significance Criteria.....	3-337
3.15-4	Estimated Quarterly ROGs and NO <sub>x</sub> Emissions During Construction of the Proposed Project.....	3-338
3.15-5	Estimated Daily Air Emissions for 2005, 2010 and 2015 Associated With Peak Public River Access Trips to the American River Near Auburn .....	3-340
3.15-6	Estimated Quarterly PM <sub>10</sub> Emission During Construction of the Proposed Project.....	3-341
3.15-7	Estimated Quarterly ROG and NO <sub>x</sub> Emissions During Construction of the Upstream Diversion Alternative.....	3-343
3.15-8	Estimated Quarterly PM <sub>10</sub> Emissions During Construction of the Upstream Diversion Alternative .....	3-344
3.16-1	Typical Noise Levels for Urban Settings .....	3-348
3.16-2	El Dorado County Noise Level Performance Protection Standards for Noise Sensitive Land Uses Affected by Non-Transportation Sources.....	3-350
3.16-3	City of Auburn Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Sources .....	3-350
3.16-4	Noise Impact Indicators and Significance Criteria.....	3-351
3.17-1	Hazardous Materials to be Stored On-Site During Construction of the Proposed Project and Upstream Diversion Alternative.....	3-363
3.17-2	Summary of Hazardous Materials Regulatory Authorities .....	3-365
3.17-3	Public Health and Worker Safety Impact Indicators and Significance Criteria.....	3-367
4-1	Locations Where the Draft EIS/EIR was made Available for Public Review .....	4-8
4-2	Agencies, Organizations, and Individuals Receiving Copies of the Draft and Final EIS/EIR .....	4-9
5-1	Resource Agency Participants and Preparers .....	5-1
5-2	List of Preparers .....	5-2